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ABSTRACT

This report details the results of a project that sought to understand the relationship between cross-gender friendships in early adolescence and substance use expectancies and behaviors. The data for this investigation came from a longitudinal investigation known as the Teen Attitude Survey which began in the fall of 1997 and tracked a sample of sixth, seventh, and eighth grade students in New York City and an urban area of Massachusetts. As the survey was quite extensive, the questions important to this enquiry were separated and coded. Each student's friendship patterns were analyzed as to whether they were involved in a reported same-gender or cross-gender best friendship. Next, the student's beliefs and use of cigarettes and alcohol were investigated. Then, the student's perception of their best friends' attitudes toward cigarettes and alcohol was analyzed. Finally, a comparison was made across the two best friendship categories to do a preliminary investigation of differences in attitudes and use of the substances under investigation. Results from the investigation indicate that early adolescents who select cross-gender best friends put themselves at significant risk for initiation into early substance use. An appendix contains the questionnaire items used in data analysis. (Contains 19 references and 6 tables.) (GCP)

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Early Adolescent Cross-Gender Friendship Influences on Substance Use Expectancies and Behaviors

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Early Adolescent Cross-Gender Friendship Influences on Substance Use Expectancies and Behaviors

This report details the results of the PSC – CUNY 33 grant funded project that sought to understand the relationship between cross-gender friendships in early adolescence and substance use expectancies and behaviors. Early adolescents typically employ gender bias, engaging in friendships with same sex peers. However, participation in cross-gender friendships is not uncommon (Bukowski, Sippola, & Hoza, 1999) and interest in the opposite gender has been found to increase from the fourth to the eighth grade (Harton & Latane, 1997). Increased feelings of peer acceptance have been associated with cross-gender friendship groupings (McDougall, Hymel & Zarbatany, 2000) and those early adolescents who are popular with the opposite sex hold more mature attitudes (Harton & Latane, 1997). Mature attitudes as assessed by Harton & Latane (1997) were found to include positive attitudes toward normal developmental activities such as kissing, make-up, and dating, as well as well as positive attitudes toward deviant behaviors such as smoking and drinking. Cigarette and alcohol research has found that initial experimentation with these substances typically takes place during early adolescence (Keefe, 1994; Quine & Stephenson, 1990). Therefore, an exploration of the impact of cross-gender friendship influences on cigarette and alcohol beliefs and use during early adolescence is essential.

Girls in cross-gender friendships have been found to engage in more socializing activities (McDougal, et al., 2000). A study of high school seniors by Furrer and French (2000) found that cross-gender friendships contributed to females increased sense of social competence. Furrer and French found the adolescent males sought out friendships with females to achieve a sense of intimacy that they don't derive from same-gender friendships. Intimacy for females was

structured around self-disclosure, where for males it was structured around an activity. Moreover, Furrer and French found that positive friendship qualities within cross-gender friendships were related to increased alcohol use. For males, alcohol use is an activity and for females, it facilitates self-disclosure. Therefore, both genders are satisfied in their need for intimacy by engaging in alcohol use.

Although the use of alcohol by early adolescents in cross-gender friendships may facilitate intimacy (Furrer and French, 2000), individuals involved in cross-gender friendships typically report lower levels of reciprocated confidences and supportive companionship (Swenson & Strough, 2000). Components of relationship quality such as sharing problems, keeping promises, and sustaining positive feelings are experienced differently in same-gender and cross-gender friendships. Therefore, males and females in cross-gender friendships are deriving different benefits from the relationship. As stated above, Furrer and French (2000) found males to seek cross-gender relationships in order to achieve intimacy; females may seek cross-gender friendships in order to feel socially accepted. Although females in cross-gender friendships achieved social competence, their behavioral competence decreased (Furrer & French, 2000). Furrer and French hypothesized that females in cross-gender friendships may feel unable to respond in a contradictory way to the demands of the relationship.

Males are likely to initiate smoking cigarettes (Lucas & Lloyd, 1999) and drinking alcohol (Johnson & Johnson, 1998) at younger ages than females. Lucas and Lloyd found that two thirds of their sample had tried their first cigarette in the presence of one or two friends. This places the act of smoking in a social context. In addition, females in the study who did not smoke, described those that did as active and demanding of conformity. The term active was used to describe going somewhere to smoke, and the reason for going somewhere was to attract

males. Lucas and Lloyd also found that smokers were seen as fun loving and the act of smoking as a passport to an exciting lifestyle.

Therefore, cross-gender friendships place demands on the males and females in the relationship differentially. Females who are social and want to be popular may seek out these relationships to fulfill that need. Males may seek out cross-gender relationships to achieve intimacy that they do not have in same-gender relationships. Consequently, the mature attitudes that drive the early adolescent to engage in cross-gender friendships, also provides the reinforcement to act on those mature attitudes. As a result, early adolescents in these friendships may initiate smoking and drinking at an earlier age than their peers in same-gender friendships. Females in cross-gender friendships may even be at increased risk for early experimentation and use of cigarettes and alcohol. This may be due to early adolescent males initiating substance use at an earlier age than females (Lucas & Lloyd, 1999; Johnson & Johnson, 1998) while females may feel unable to respond in a contradictory way to the demands of the cross-gender friendship (Furrer & French, 2000). Therefore, cross-gender friendships and the impact of these friendships on substance use beliefs and behaviors is an area that is important to investigate.

Five questions guided this investigation: 1). Are cross-gender friendships common among an early adolescent population? 2). Do students who report cross-gender friendships differ in their beliefs about the use of cigarettes and alcohol than those individuals who report same-gender friendships? 3). Do students who report cross – gender friendships differ in their use of cigarettes and alcohol than those individuals who report same-gender friendships? 4). Do the male students in this sample report using cigarettes and alcohol at a younger age than the female students in the sample? Are their beliefs about these substances different? 5). Do the rates of engagement in cross-gender friendships differ across the three grade levels surveyed and how does this impact on the student's beliefs toward and use of cigarettes and alcohol? The goal

in addressing these five questions was to deepen the body of knowledge that exists on cross-gender friendships in early adolescence.

Method

The data for this investigation came from a federally funded longitudinal investigation known as the Teen Attitude Survey (Johnson & Johnson, 1996) which began in the fall of 1997 and tracked a convenient sample of public school and Catholic school sixth, seventh, and eighth grade students in New York City and an urban area of Massachusetts (National Institute of Alcohol Abuse and Alcoholism Grant # R01 AA0 9924). The utilized sample consisted of aggregated data from three waves of collection resulting in data on 850 sixth graders, 860 seventh graders, and 516 eighth graders. An active parental consent was used. All students whose parents consented to their participation were included in the sample. Trained research assistants administered the survey to students during regular school hours. Prior to the administration of the questionnaire, students were informed about the intent and purpose of the study, the procedures to guarantee anonymity and confidentiality, their rights in a research study, and the necessity for their informed assent. The early adolescents completed the questionnaire in which they reported information about their best friends' gender, their own attitudes and expectancies toward cigarettes and alcohol, their own use of cigarettes and alcohol, their perceptions of the reported best friends attitudes and use of cigarettes and alcohol, and basic demographic information about themselves (i.e. sex, age, grade, etc…)

Measures

The measure used in this investigation is a questionnaire that has been compiled by the directors of the Teen Attitude Study (Johnson & Johnson, 1996). The questions are based on items from other longitudinal studies investigating attitudes and lifestyle choices and on items from standardized questionnaires used in this field of study. The questionnaire was piloted on

two middle school populations. The items utilized on the questionnaire address cigarette and alcohol beliefs and practices of the early adolescent student, the student's perception of their best friend's beliefs, and the positive and negative expectancies held toward smoking cigarettes and drinking alcohol. The questionnaire consisted of 152 items and took students approximately one hour to complete. The questions were measured as either dichotomous variables or continuous variables (i.e. a Likert-type scale). The expectancy question sets were summed and averaged to produce a single score used in the data analysis. The variables used in the present investigation and their derivations are as follows (see Appendix A for actual questions):

Smoking and Drinking Expectancies. This measure is often referred to as beliefs. As such, it reflects the outcomes, both positive and negative, that the student expects from smoking cigarettes and drinking alcohol. It incorporates items concerned with body sensations experienced e.g. "I feel good", personality alterations that will occur e.g. "I am more outgoing" and the expectations of the consequences that the act will elicit from friends e.g. "I am more accepted by others." The expectancy items on the questionnaire have been derived from the Adolescent Alcohol Expectancy Questionnaire (Brown, Christiansen & Goldman, 1987) and from the Effects of Drinking Alcohol Scale (Leigh 1989b). The questionnaire used items from both scales because the former addresses only positive effect expectancies. The alcohol expectancy items have been extended to the smoking domain in order to assess comparable smoking expectancies. Expectancy items from the Teen Attitude Study have been used with two previous samples. Factor analysis for both previous samples' smoking and alcohol expectancies found that positive and negative expectancies emerged as distinct variables (Johnson & Johnson, 1996). Therefore, the positive expectancy items were summed and averaged to get an overall positive expectancy score and the negative expectancy items were summed and averaged to obtain an overall negative expectancy score. As this study is investigating a population that

primarily has not begun to engage in the behaviors in question, it is important to look at both positive and negative expectancies. Investigating both positive and negative expectancies is important, as research has shown that the shift to increasingly positive expectancies is a precursor to the initiation of substance use behaviors.

Smoking and Drinking Attitudes. Attitudes are global assessments that place a value judgment on a belief. Expectancies are the beliefs about the consequences of engaging in an act and therefore are a component of attitudes. Attitudes are measured in this investigation by utilizing a Likert-type scale and ask the early adolescent to indicate how they feel about smoking and drinking on this continuous variable (Leigh, 1989a). Additionally, the early adolescent is asked to indicate their perception of their friends and best friends' attitudes toward smoking and drinking. Although some research has investigated the difference between the perceived and actual attitudes held by friends and best friends, in this investigation the perceived attitude is more important as it reflects the early adolescent's beliefs about their peers' attitudes.

Results

As the survey was quite extensive, the questions important to this inquiry, as guided by the five questions, were separated and coded. Each student's friendship patterns were analyzed as to whether they were involved in a reported same-gender or cross-gender best friendship. Next, the student's beliefs and use of cigarettes and alcohol were investigated. Then, the student's perception of their best friends' attitudes toward cigarettes and alcohol was analyzed. Finally a comparison was made across the two best friendship categories to do a preliminary investigation of differences in attitudes and use of the substances under investigation.

The first question under investigation is: Are cross-gender friendships common among an early adolescent population? Table 1 reports the frequency of the best friendship groups by grade. While cross-gender best friendships do not appear to be a common occurrence, they are

present in the sample. Additionally, the frequency of cross-gender friendships does increase slightly with subsequent grades.

Table 1

Frequency of Best Friend Groups by Grade

Grade		Best Friend Group		Total
		Same-gender	Cross-gender	
6	N	785	65	850
	%	92.4%	7.6%	100%
7	N	783	77	860
	%	91.0%	9.0%	100%
8	N	461	55	516
	%	89.3%	10.7%	100%

Independent samples *t* tests were conducted to evaluate the other guiding questions. Due to the unequal group sizes in these analyses, a more conservative test was used in all cases. Additionally, the *t* value for unequal variances was used instead of the standard *t* value.

The second question guiding this investigation is: Do students who report cross-gender friendships differ in their beliefs about the use of cigarettes and alcohol than those individuals who report same-gender friendships? Table 2 lists the means of the expectancies reported by the same-gender and cross-gender best friend group. The means of the best friend groupings are separated into grade and positive and negative expectancy categories for both cigarettes and alcohol. The results of this *t* test indicate that those students who report a cross-gender best friend endorse more positive expectancies (i.e. beliefs) about cigarettes and alcohol than students with the same-gender best friend. In addition, students with cross-gender best friends endorse

less negative expectancies about the effects of these substances. As indicated in the table, cross-gender best friendship groups in grade six reached significance for negative smoking, positive smoking, and positive alcohol expectancy groupings. However, it is interesting to note that none of the eighth grade expectancy groups reached significance, and that the seventh grade cross-gender best friend group held less negative expectancies about alcohol than the same-gender best friends in the sample.

Table 2

Means of Expectancy Scales by Best Friend Groups and Grade

		Same-Gender Best Friend			Cross-Gender Best Friend		
Expectancies	Grade	Mean	SD	N	Mean	SD	N
Negative Smoking	6	4.08	1.48	760	3.47**	1.65	63
	7	3.98	1.57	778	3.82	1.53	76
	8	3.90	1.79	453	3.48	1.58	53
Positive Smoking	6	1.91	.99	757	2.32*	1.33	63
	7	2.13	1.11	777	2.33	1.14	76
	8	2.35	1.21	455	2.71	1.40	52
Negative Alcohol	6	4.07	1.47	768	3.80	1.43	63
	7	3.91	1.48	778	3.63*	1.39	77
	8	3.65	1.49	458	3.44	1.45	55
Positive Alcohol	6	2.02	1.02	761	2.52**	1.31	63
	7	2.31	1.15	777	2.62	1.32	77
	8	2.67	1.27	458	3.08	1.62	55

*p<.05, **p<.01

As an extension of this question, an analysis of the early adolescent's perception of their friend's attitudes toward smoking and drinking was performed. The findings from this analysis are presented in Table 3. Again it was found that sixth and seventh grade students with cross-gender best friends perceive their best friends as having more positive attitudes toward cigarettes and alcohol.

Table 3

Means of Perceptions of Friends' Attitudes by Best Friend Group and Grade

		Same-Gender Best Friend			Cross-Gender Best Friend		
Attitudes	Grade	Mean	SD	N	Mean	SD	N
Smoking	6	1.95	1.03	763	2.61**	1.43	62
	7	2.31	1.22	765	2.83**	1.63	75
	8	2.73	1.80	452	2.89	1.12	55
Alcohol	6	1.94	1.00	761	2.59**	1.44	61
	7	2.38	1.11	763	2.71**	1.08	75
	8	2.70	1.11	452	2.96	1.10	55

*p<.05, **p<.01

In Table 4 the question addressed is: do students who report cross – gender friendships differ in their use of cigarettes and alcohol than those individuals who report same-gender friendships? Results from this analysis indicate that students with cross-gender best friends generally report using more cigarettes and alcohol than students with same-gender best friends. In this analysis, one group failed to reach significance; cigarette use by seventh graders.

Table 4

Substance Use Means by Best Friend Group and Grade

		Same-Gender Best Friend			Cross-Gender Best Friend		
Substance Use	Grade	Mean	SD	N	Mean	SD	N
Cigarette Use	6	.15	.72	774	.97**	1.89	64
	7	.39	1.21	773	.80	1.83	76
	8	.62	1.43	456	1.47*	2.60	54
Alcohol Use	6	.39	.87	762	1.00**	1.67	62
	7	.81	2.05	765	1.37**	1.60	71
	8	1.19	1.43	452	1.74*	1.84	54

*p<.05, **p<.01

Tables 5 and 6 address the multipart question: Do the male students in the sample report using cigarettes and alcohol at a younger age than the female students in the sample? Are their beliefs about these substances different? In regard to the use of cigarettes and alcohol, this investigation found that females were smoking significantly more than the males in the sixth grade and in the eighth grade. In addition, the use of alcohol by females and males did not reach significance until the eighth grade when females were using alcohol more than the males.

Results from the analysis of beliefs indicate that females endorse more positive expectancies about both cigarettes and alcohol in grades six and eight.

Table 5

Substance Use Means by Gender and Grade

		Males			**Females**		
	Grade	Mean	Sd	N	Mean	Sd	N
Cigarette Use	6	.01	.62	392	.30**	1.04	471
	7	.35	1.05	374	.49	1.44	497
	8*	.51	1.43	232	.84*	1.70	290
Alcohol Use	6	.41	.89	391	.45	1.02	457
	7	.93	2.67	368	.81	1.32	489
	8	1.18	1.48	234	1.29*	1.47	286

*p<.05, **p<.01

Table 6

Means of Expectancy Scales by Gender and Grade

		Males			Females		
	Grade	Mean	sd	N	Mean	Sd	N
Negative Smoking	6	3.95	1.54	383	4.09	1.47	460
	7	3.87	1.65	376	4.00	1.53	501
	8	3.83	1.96	233	3.88	1.60	286
Positive Smoking	6	1.82	.96	383	2.03**	1.06	457
	7	2.07	1.10	376	2.21	1.11	500
	8	2.21	1.08	233	2.51**	1.32	288
Negative Alcohol	6	3.91	1.51	387	4.07	1.43	465
	7	3.76	1.54	376	3.95	1.45	502
	8	3.52	1.57	234	3.70	1.42	293
Positive Alcohol	6	1.98	1.00	384	2.13*	1.10	462
	7	2.25	1.12	376	2.40	1.19	501
	8	2.47	1.21	234	2.87**	1.37	291

*p< .05, **p<.01

Discussion

The final question asked in the current investigation (do the rates of engagement in cross-gender friendships differ across the three grade levels surveyed and how does this impact on the student's beliefs toward and use of cigarettes and alcohol?) synthesizes several of the analyses and helps to summarize the information learned from this investigation. Results indicate that the engagement in cross-gender friendships does indeed differ across the three grade levels surveyed. Although this form of best friendship group is not common, it is also not unusual.

A developmental process is indicated as with each grade, the percentage of cross-gender best friendships does increase. Results show that in sixth grade 7.6% of the sample report having a cross-gender best friend, moving to 9.0% in seventh grade and then to 10.7% in eighth grade.

Additionally, the significance of having a cross-gender best friend, when this type of relationship is not the norm, is seen in the impact that this type of relationship has on cigarette and alcohol expectancies. For both smoking and drinking, early adolescents in the sixth grade who have a cross-gender best friendship hold more positive expectancies about those substances. In addition, seventh graders with cross-gender best friends also hold more positive expectancies about the idea of drinking alcohol. As indicated in the description of the measures, this means that this group of sixth and seventh graders expects more positive outcomes from using these substances. Also, sixth graders with cross-gender best friendships hold significantly less negative expectancies about smoking, and seventh graders with cross-gender friendships hold significantly less negative expectancies about drinking.

It was also found that the early adolescents with cross-gender best friendships perceive their best friends as having a more positive attitude toward the use of cigarettes and alcohol. This finding was highly significant for the students in the sixth and seventh grades. This indicates that that these early adolescents believe that their cross-gender best friend approves of using cigarettes and alcohol and is thereby contributing to the early adolescents' belief system that they will obtain positive outcomes if they were to engage in smoking and drinking.

Furthermore, the data shows that early adolescents who report having a cross-gender best friend are engaging in the use of cigarettes and alcohol at a significantly greater rate than those individuals who elect a same-gender best friend. This result was found in every grade, for both substances except as noted, for seventh grade cigarette use.

The data did not show the pattern of initiation into substance use that the literature predicted. It was not males driving the early initiation into smoking, but females who were smoking significantly more than the males in the sixth grade. The analysis of alcohol use did not show one gender differing from the other in regard to their initiation into alcohol use until the eighth grade, when the females drank significantly more than the males. However, in regard to the expectations derived from smoking and drinking, the females did indicate significantly more positive expectancies for both smoking and drinking in sixth and eighth grades.

In conclusion, results from this investigation indicate that early adolescents who select cross-gender best friends place themselves at significant risk for initiation into early substance use. By eighth grade, 47% of all adolescents have tried cigarettes, and 54% have tried alcohol (Johnston, O'Malley, & Bachman, 1998). In addition, approximately 60% of smokers start by the age of 13 and 90% start before age 20 (Meier, 1991). The initiation of smoking and drinking behaviors place early adolescents at high risk for the continuation of those behaviors, and contribute to the health and safety problems that develop as a result of the use of cigarettes and alcohol (Breslau & Peterson, 1996; Fergusson, Lynskey, & Horwood, 1995; Grant & Dawson, 1997; Oygard, Klepp, Tell, & Vellar, 1995). Research on the precursors to cigarette and alcohol use at an early age is important in understanding the mechanisms through which these behaviors are initiated. For only through the identification and understanding of these early risk factors can effective prevention and intervention programs be mounted.

This investigation has identified cross-gender best friendships as one of the risk factors for early initiation into substance use. This information seeks to contribute to the body of knowledge of early risk factors in substance use behaviors.

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Appendix A

Questionnaire items used in data analysis:

1. Are you male or female?

2. When were you born? _____/_____/_____ (month/day/year)

47. Now please think about your closest friend, the friend you spend the most time with.

Is this friend : _____male _____ female

Substance Use

20. About how often have you smoked cigarettes?

0 = Do not smoke at all

1 = Less than once a year

2 = Less than once a month, but at least once a year

3 = About once a month

4 = Three or four days a month

5 = One or two days a week

6 = Three or four days a week

7 = Every day

40. About how often have you drunk any kind of alcoholic beverage (beer, wine or liquor)?

0 = Do not drink alcoholic beverages

1 = Less than once a year

2 = Less than once a month, but at least once a year

3 = About once a month

4 = Three or four days a month

5 = One or two days a week

6 = Three or four days a week

7 = Every day

Positive Expectancies

If I smoke cigarettes:

27. I am more accepted by others

28. I feel good

30. I have a good time

33. I feel happy

34. I am more outgoing

35. It takes away my bad moods and feelings

If I drink alcohol:

52. I am more accepted by others

54. I feel good

57. It takes away my bad moods and feelings

59. I have a good time

62. I feel happy

64. I am more outgoing

Negative Expectancies:

If I smoke cigarettes:

29. I feel ashamed of myself

31. I feel guilty

32. I get a cough

36. I feel sad or depressed

37. I feel sick

If I drink alcohol:

53. I become clumsy or uncoordinated

55. I feel ashamed of myself

56. I get into fist fights

58. I can't concentrate

60. I fell guilty

61. I get a hangover

63. I get mean

65. I feel sad or depressed

66. I feel sick

All expectancies scored:

1 = no chance

2 = very unlikely

3 = unlikely

4 = likely

5 = very likely

6 = certain to happen

Best Friend Attitude:

140. My best friend thinks that smoking cigarettes is:

_____ very good _____ good _____ bad _____ very bad

141. My best friend thinks that drinking alcohol is:

_____ very good _____ good _____ bad _____ very bad

Author's Note

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